

## Claims

- [c1] 1.A dynamic crash pulse wave assessor comprising:  
a crash pulse waveform;  
a reference waveform;  
a time domain assessor including a first crash pulse waveform integrator, said time domain assessor comparing said crash pulse waveform to said reference waveform to produce a time domain index;  
a frequency domain assessor including a crash pulse waveform fast fourier transform and a reference waveform fast fourier transform, said frequency domain assessor comparing said crash pulse waveform to said reference waveform to produce a frequency domain index; and  
an overall assessor merging said time domain index and said frequency domain index to produce an overall index.
- [c2] 2.A dynamic crash pulse wave assessor as described in claim 1, further comprising:  
a second crash pulse waveform integrator; and  
a second reference waveform integrator.
- [c3] 3.A dynamic crash pulse wave assessor as described in claim 1, further comprising:  
a time frame indexer producing a time frame index by comparing said crash pulse waveform to said reference waveform.
- [c4] 4.A dynamic crash pulse wave assessor as described in claim 3, wherein said time frame index is based upon the percentage of difference between said crash pulse waveform and said reference waveform.
- [c5] 5.A dynamic crash pulse wave assessor as described in claim 1, wherein said frequency domain assessor compares said crash pulse waveform to said reference waveform based upon predefined frequency regions.
- [c6] 6.A dynamic crash pulse wave assessor as described in claim 5, wherein said predetermined frequency regions include first large peak, 0–50 Hz, 50–400 Hz, 220–370 Hz, and 400–600 Hz.

- [c7] 7.A dynamic crash pulse wave assessor as described in claim 1, wherein said frequency domain index is stored in a frequency matrix.
- [c8] 8.A dynamic crash pulse wave assessor as described in claim 1, further comprising:  
at least one additional constraint component modifying said overall index.
- [c9] 9.A dynamic crash pulse wave assessor as described in claim 8, wherein said at least one additional constraint component modifies said overall index based upon a zero index accumulation of velocity rating.
- [c10] 10.A dynamic crash pulse wave assessor as described in claim 1, further comprising:  
a waveform duration limiter limiting the duration of said crash pulse waveform.
- [c11] 11.A dynamic crash pulse wave assessor as described in claim 1, further comprising:  
a treatment guideline utilizing said overall index.
- [c12] 12.A CAE waveform assessor comprising:  
a CAE resultant waveform;  
a reference waveform;  
a time domain assessor producing a time domain index by comparing said CAE resultant waveform to said reference waveform; and  
a frequency domain assessor producing a frequency domain index by comparing said CAE resultant waveform to said reference waveform.
- [c13] 13.A dynamic crash pulse wave assessor as described in claim 12, further comprising:  
an overall assessor merging said time domain index with said frequency domain index to produce an overall index.
- [c14] 14.A dynamic crash pulse wave assessor as described in claim 12, further comprising:  
a first CAE waveform integrator, and  
a first reference waveform integrator.

- [c15] 15.A dynamic crash pulse wave assessor as described in claim 14, further comprising:  
a second CAE waveform integrator; and  
a second reference waveform integrator.
- [c16] 16.A dynamic crash pulse wave assessor as described in claim 12, further comprising:  
a time frame indexer producing a time frame index by comparing said CAE resultant waveform to said reference waveform.
- [c17] 17.A dynamic crash pulse wave assessor as described in claim 16, wherein said time frame index is based upon the percentage of difference between said CAE resultant waveform and said reference waveform.
- [c18] 18.A dynamic crash pulse wave assessor as described in claim 12, wherein said frequency domain assessor compares said CAE resultant waveform to said reference waveform based upon predefined frequency regions.
- [c19] 19.A dynamic crash pulse wave assessor as described in claim 13, further comprising:  
at least one additional constraint component modifying said overall index.
- [c20] 20.A dynamic crash pulse wave assessor as described in claim 12, further comprising:  
a waveform duration limiter limiting the duration of said CAE resultant waveform.
- [c21] 21.A method of assuring a CAE resultant waveform to a reference waveform to produce a time domain index;  
comparing the CAE resultant waveform to said reference waveform to produce a frequency domain index; and  
merging said time domain index with said frequency domain index to produce an overall index.
- [c22] 22.A method as described in claim 21, further comprising:  
double integrating the CAE resultant waveform and said reference waveform to

produce said time domain index.

- [c23] 23.A method as described in claim 21, further comprising:  
fast fourier transforming the CAE resultant waveform and said reference  
waveform to produce said frequency domain index.
- [c24] 24.A method as described in claim 21, wherein said frequency domain index is  
created in a plurality of predetermined frequency regions.